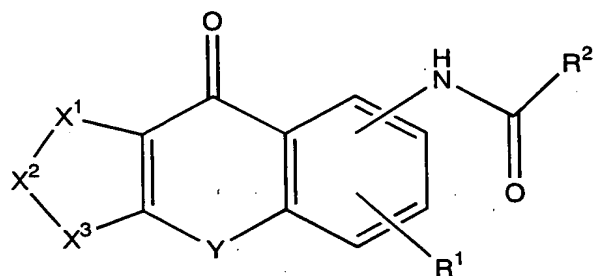


# CLAIMS

1. An antitussive which comprises, as an active ingredient, a tricyclic compound represented by Formula (I)



(I)

{wherein  $R^1$  represents a hydrogen atom, substituted or unsubstituted lower alkyl, substituted or unsubstituted lower alkoxy or halogen,

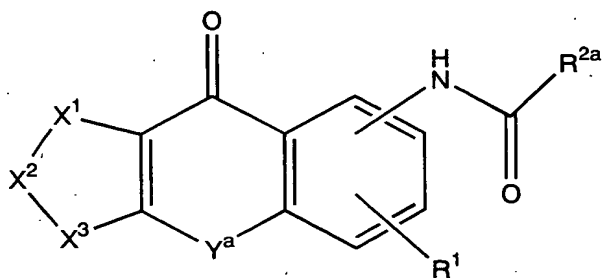
$X^1-X^2-X^3$  represents  $CR^5=CR^6-CR^7=CR^8$  [wherein  $R^5$ ,  $R^6$ ,  $R^7$  and  $R^8$  may be the same or different and each represents a hydrogen atom, substituted or unsubstituted lower alkyl, hydroxy, substituted or unsubstituted lower alkoxy, nitro, amino, mono(lower alkyl)-substituted amino, di(lower alkyl)-substituted amino, substituted or unsubstituted lower alkanoylamino or halogen],  $N(O)_m=CR^6-CR^7=CR^8$  (wherein  $R^6$ ,  $R^7$  and  $R^8$  have the same meanings as defined above, respectively and  $m$  represents 0 or 1),  $CR^5=CR^6-N(O)_m=CR^8$  (wherein  $R^5$ ,  $R^6$ ,  $R^8$  and  $m$  have the same meanings as defined above, respectively),  $CR^5=CR^6-CR^7=N(O)_m$  (wherein  $R^5$ ,  $R^6$ ,  $R^7$  and  $m$  have the same meanings as defined above, respectively),  $CR^5=CR^6-O$  (wherein  $R^5$  and  $R^6$  have the same meanings as defined above, respectively),  $CR^5=CR^6-S$  (wherein  $R^5$  and  $R^6$  have the same

meanings as defined above, respectively),  $O-CR^7=CR^8$  (wherein  $R^7$  and  $R^8$  have the same meanings as defined above, respectively),  $S-CR^7=CR^8$  (wherein  $R^7$  and  $R^8$  have the same meanings as defined above, respectively) or  $O-CR^7=N$  (wherein  $R^7$  has the same meaning as defined above),

Y represents  $-CH_2S-$ ,  $-CH_2SO-$ ,  $-CH_2SO_2-$ ,  $-CH_2O-$ ,  $-CH=CH-$ ,  $-(CH_2)_p-$  (wherein p represents an integer of 0 to 2),  $-SCH_2-$ ,  $-SOCH_2-$ ,  $-SO_2CH_2-$  or  $-OCH_2-$ , and

$R^2$  represents a hydrogen atom, substituted or unsubstituted lower alkyl, substituted or unsubstituted lower alkenyl, substituted or unsubstituted lower alkoxy, amino, mono(substituted or unsubstituted lower alkyl)-substituted amino, di(substituted or unsubstituted lower alkyl)-substituted amino, substituted or unsubstituted aryl, substituted or unsubstituted heteroaryl, substituted or unsubstituted aralkylamino, substituted or unsubstituted arylamino, or a substituted or unsubstituted heterocyclic group} or a pharmaceutically acceptable salt thereof.

2. An antitussive which comprises, as an active ingredient, a tricyclic compound represented by Formula (Ia)



(Ia)

[wherein  $R^1$  and  $X^1$ - $X^2$ - $X^3$  have the same meanings as defined above, respectively,

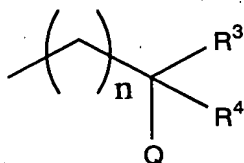
$Y^a$  represents  $-\text{CH}_2\text{SO}_2-$ ,  $-\text{SCH}_2-$ ,  $-\text{SOCH}_2-$ ,  $-\text{SO}_2\text{CH}_2-$  or  $-\text{OCH}_2-$  and when  $Y^a$  is  $-\text{CH}_2\text{SO}_2-$ ,  $-\text{SCH}_2-$ ,  $-\text{SOCH}_2-$  or  $-\text{SO}_2\text{CH}_2-$ ,

$R^{2a}$  represents a hydrogen atom, substituted or unsubstituted lower alkyl, substituted or unsubstituted lower alkenyl, substituted or unsubstituted lower alkoxy, amino, mono(substituted or unsubstituted lower alkyl)-substituted amino, di(substituted or unsubstituted lower alkyl)-substituted amino, substituted or unsubstituted aryl, substituted or unsubstituted heteroaryl, substituted or unsubstituted aralkylamino, substituted or unsubstituted arylamino, a substituted or unsubstituted heteroalicyclic group, or a substituted or unsubstituted nitrogen-containing heterocyclic group and

when  $Y^a$  is  $-\text{OCH}_2-$ ,

$R^{2a}$  represents a hydrogen atom, trifluoromethyl, substituted or unsubstituted lower alkenyl, substituted or unsubstituted lower alkoxy, amino, mono(substituted or unsubstituted lower

alkyl)-substituted amino, di(substituted or unsubstituted lower alkyl)-substituted amino, substituted or unsubstituted aryl, substituted or unsubstituted heteroaryl, substituted or unsubstituted aralkylamino, substituted or unsubstituted arylamino, a substituted or unsubstituted heteroalicyclic group, a substituted or unsubstituted nitrogen-containing heterocyclic group, or Formula (II)



(II)

(wherein n is 0 or 1; R<sup>3</sup> and R<sup>4</sup> may be the same or different and represents a hydrogen atom, substituted or unsubstituted lower alkyl, substituted or unsubstituted cycloalkyl, substituted or unsubstituted aryl, or substituted or unsubstituted aralkyl, or R<sup>3</sup> and R<sup>4</sup> may be combined together with the adjacent carbon atom thereto to form cycloalkyl; and Q represents hydroxy, substituted or unsubstituted lower alkoxy, amino or halogen) ] or a pharmaceutically acceptable salt thereof.

3. The antitussive according to Claim 2, wherein Y<sup>a</sup> is -CH<sub>2</sub>SO<sub>2</sub>-, -SCH<sub>2</sub>-, -SOCH<sub>2</sub>- or -SO<sub>2</sub>CH<sub>2</sub>-.

4. The antitussive according to Claim 2, wherein Y<sup>a</sup> is -OCH<sub>2</sub>-.

5. The antitussive according to any of Claims 2 to 4, wherein R<sup>1</sup> is a hydrogen atom, substituted or unsubstituted lower alkoxy

or halogen.

6. The antitussive according to any of Claims 2 to 4, wherein  $R^1$  is a hydrogen atom.

7. The antitussive according to any of Claims 2, 5 and 6, wherein  $Y^a$  is  $-\text{CH}_2\text{SO}_2-$ ,  $-\text{SO}_2\text{CH}_2-$  or  $-\text{OCH}_2-$ .

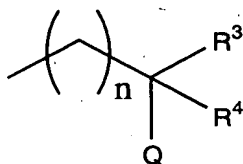
8. The antitussive according to any of Claims 2, 5 and 6, wherein  $Y^a$  is  $-\text{CH}_2\text{SO}_2-$  or  $-\text{SO}_2\text{CH}_2-$ .

9. The antitussive according to any of Claims 2, 5 and 6, wherein  $Y^a$  is  $-\text{CH}_2\text{SO}_2-$ .

10. The antitussive according to any of Claims 2 to 9, wherein  $X^1-X^2-X^3$  is  $\text{S}-\text{CR}^7=\text{CR}^8$  (wherein  $R^7$  and  $R^8$  have the same meanings as defined above, respectively).

11. The antitussive according to any of Claims 2 to 9, wherein  $X^1-X^2-X^3$  is  $\text{CR}^5=\text{CR}^6-\text{CR}^7=\text{CR}^8$  (wherein  $R^5$ ,  $R^6$ ,  $R^7$  and  $R^8$  have the same meanings as defined above, respectively).

12. The antitussive according to any of Claims 2 to 11, wherein  $R^{2a}$  is Formula (II)



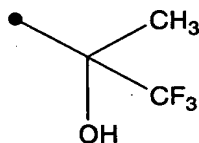
(II)

(wherein  $n$ ,  $R^3$ ,  $R^4$  and  $Q$  have the same meanings as defined above, respectively).

13. The antitussive according to Claim 12, wherein  $n$  is 0.

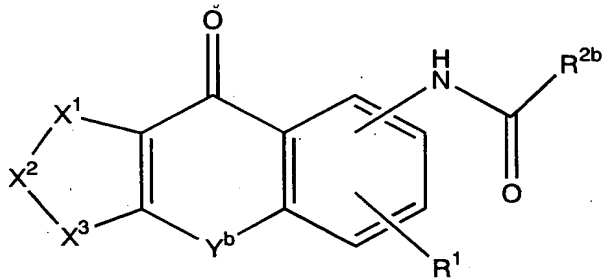
14. The antitussive according to Claim 13, wherein R<sup>3</sup> is methyl, R<sup>4</sup> is trifluoromethyl, and Q is hydroxy.

15. The antitussive according to Claim 2, wherein R<sup>1</sup> is a hydrogen atom, Y<sup>a</sup> is -CH<sub>2</sub>SO<sub>2</sub>-, X<sup>1</sup>-X<sup>2</sup>-X<sup>3</sup> is S-CR<sup>7</sup>=CR<sup>8</sup> (wherein R<sup>7</sup> and R<sup>8</sup> have the same meanings as defined above, respectively), and R<sup>2</sup> is Formula (III)



(III)

16. An antitussive which comprises, as an active ingredient, a tricyclic compound represented by Formula (Ib)

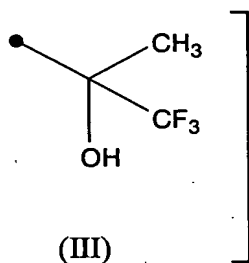


(Ib)

[wherein R<sup>1</sup> and X<sup>1</sup>-X<sup>2</sup>-X<sup>3</sup> have the same meanings as defined above, respectively,

Y<sup>b</sup> represents -CH<sub>2</sub>O-, -CH<sub>2</sub>S-, -CH<sub>2</sub>SO-, -CH=CH- or -(CH<sub>2</sub>)<sub>p</sub>- (wherein p has the same meaning as defined above) and

R<sup>2b</sup> represents Formula (III)



or a pharmaceutically acceptable salt thereof.

17. The antitussive according to Claim 16, wherein  $X^1-X^2-X^3$  is  $CR^5=CR^6-CR^7=CR^8$  (wherein  $R^5$ ,  $R^6$ ,  $R^7$  and  $R^8$  have the same meanings as defined above, respectively) or  $CR^5=CR^6-CR^7=N$  (wherein  $R^5$ ,  $R^6$  and  $R^7$  have the same meanings as defined above, respectively).

18. The antitussive according to Claim 16, wherein  $X^1-X^2-X^3$  is  $CR^5=CR^6-O$  (wherein  $R^5$  and  $R^6$  have the same meanings as defined above, respectively) or  $CR^5=CR^6-S$  (wherein  $R^5$  and  $R^6$  have the same meanings as defined above, respectively).

19. The antitussive according to Claim 16, wherein  $X^1-X^2-X^3$  is  $O-CR^7=CR^8$  (wherein  $R^7$  and  $R^8$  have the same meanings as defined above, respectively) or  $S-CR^7=CR^8$  (wherein  $R^7$  and  $R^8$  have the same meanings as defined above, respectively).

20. The antitussive according to any of Claims 16 to 19, wherein  $Y^b$  is  $-CH_2O-$ .

21. The antitussive according to any of Claims 16 to 19, wherein  $Y^b$  is  $-(CH_2)_p-$  (wherein  $p$  has the same meaning as defined above).

22. The antitussive according to Claim 21, wherein  $p$  is 0.

23. The antitussive according to Claim 21, wherein p is 2.

24. The antitussive according to any of Claims 16 to 19, wherein  $Y^b$  is  $-CH=CH-$ .

25. The antitussive according to any of Claims 16 to 19, wherein  $Y^b$  is  $-CH_2S-$  or  $-CH_2SO-$ .

26. A method for alleviation of a cough, which comprises a step of administering an effective amount of the tricyclic compound or the pharmaceutically acceptable salt thereof described in any of Claims 1 to 25.

27. Use of the tricyclic compound or the pharmaceutically acceptable salt thereof described in any of Claims 1 to 25 for the manufacture of an antitussive.